UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,640	11/12/2003	Tmima Koren	062891.1146	7017

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EXAMINER
CHO, HONG SOL

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/706,640	KOREN ET AL.
	Examiner	Art Unit	
	Hong Cho	2662	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _28 January 2005_.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-9,26 and 28-38_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) _38_ is/are allowed.

6) ☒ Claim(s) _1-9,26,28,30,31,33,34,36 and 37_ is/are rejected.

7) ☒ Claim(s) _29,32 and 35_ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some *   c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 08092005

DETAILED ACTION

Response to Amendment

1.   The following is in response to the amendments filed on 1/28/2005. Claims 10-25, and

27 have been cancelled. Claims 1-9, 26, and 28-38 are pending in this application.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

3.   Claim 1, 2, 4, 5, 7, 8, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Koodli (US 6608841) in view of Le et al (US 6711164), hereinafter referred to as

Le.

       Regarding claims 1, 4, 7, and 37, Koodli discloses a method, system, and logic for

performing compression, which comprises a method and an apparatus for header

compression as shown in figure 1 that receives packets (source terminal 20) coming from

Host 22 at Network Interface Controller 24 to be compressed by Compressor 26

(*receiving at a compressor a flow comprising a plurality of packets, each packet having a*

packet identifier, the packet identifiers associated with a predetermined increment). A logic is also disclosed which is used to implement Koodli's apparatus. See column 15 lines 5-25. Koodli does not disclose ignoring a change in the predetermined increment associated with the packet identifiers. Le discloses removing IP Identification (IP-ID) from the header of each packet that forms the transmission unit (column 2, lines 59-65). The IP module uses the value of the counter as the IP-ID for that packet and then increments a 2-byte counter (column 2, lines 4-8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Koodli to implement the function of removing IP-ID of Le before compression to reduce the overhead for compressing headers. The motivation to combine is to use the function of IP-ID regeneration to improve header compression efficiency (column 2, lines 51-53). Koodli discloses the compressor 26 that carries out packet compression (*compressing the plurality of packets*), and Koodli discloses outputting the compressed packet to link 10 and further to destination terminal 30 (*transmitting the flow to a decompressor*).

Regarding claims 2, 5, and 8, Koodli discloses that compressor 26 communicates to decompressor 36 a session context identifier and sequence number that is used to maintain synchronization and detect packet loss (*receiving the flow at the decompressor, each packet of the flow having a sequence number*, column 2, lines 25-30). Koodli discloses the ability to detect and be protected from packet losses (*detecting a skip in the sequence numbers of the plurality of packets of the flow and accepting the flow having the skip in the sequence numbers*, column 8, lines 27-35). The ability in tolerating packet losses equates to detecting a skip in the number and accepting the flow.

Claims 3, 6, 9, 26, 28, 30, 31, 33, 34, and 36 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Koodli in view of Le and further in view of Babbitt et al (US

6618757), hereinafter referred to as Babbitt.

Regarding claims 3, 6, and 9, Koodli discloses the ability to detect when initial

packets containing full headers to start a context stream are lost (*establishing that the*

flow comprises a compressed packet in the place of a full header packet, and establishing

that the full header packet is lost, column 2 lines 60-65). Koodli, however, fails to

expressly disclose the step of determining that an inactive time associated with the flow

has exceeded a maximum allowed inactivity period, the flow having a context identifier.

Babbitt discloses a system and method of IP address management that can reuse IP

addresses that have been inactive for a finite amount of time (column 12 lines 27-55). It

would have been obvious to one having ordinary skill in the art at the time the invention

was made to modify Koodli's embodiment to have a means of determining a time of

inactivity for utilization of context identifiers, and reusing said context identifiers for

other streams. The motivation is a desire to have an efficient and robust system that

wisely allocates the use of resources by detecting unused identifiers. This will increase

the reliability of Koodli's system, which is a first and foremost objective to accomplish in

header compression schemes.

Regarding claim 26, Koodli discloses the compressor 26 that carries out packet

compression (*compressing the plurality of packets*); and Koodli discloses outputting the

compressed packet to link 10 and further to destination terminal 30 (*transmitting the flow to a decompressor*). Koodli further discloses that compressor 26 communicates to decompressor 36 a session context identifier and sequence number that is used to maintain synchronization and detect packet loss (*receiving the flow at the decompressor, each packet of the flow having a sequence number*, column 2, lines 25-30). Koodli discloses the ability to detect and be protected from packet losses on column 8 lines 27-35. This corresponds to the step of detecting a skip in the sequence numbers of the plurality of packets of the flow; and accepting the flow having the skip in Page 6 the sequence numbers. The ability in tolerating packet losses equates to detecting a skip in the number and accepting the flow. Koodli further discloses the ability to detect when initial packets containing full headers to start a context stream is lost (*establishing that the flow comprises a compressed packet in the place of a full header packet, and establishing that the full header packet is lost*, column 2, lines 60-65). Koodli also discloses the method, means, and logic to establish a context identifier for a new stream. The initial packet is sent to decompressor 36 with the full header. Decompressor 36 then establishes a context state for that stream (column 6, lines 65-77; column 7 lines 1-15). Koodli does not disclose ignoring a change in the predetermined increment associated with the packet identifiers. Le discloses removing IP Identification (IP-ID) from the header of each packet that forms the transmission unit (column 2, lines 59-65). The IP module uses the value of the counter as the IP-ID for that packet and then increments a 2-byte counter (column 2, lines 4-8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Koodli to implement the

function of removing IP-ID of Le before compression to reduce the overhead for

compressing headers. The motivation to combine is to use the function of IP-ID

regeneration to improve header compression efficiency (column 2, lines 51-53). Koodli,

fails to expressly disclose the step of determining that an inactive time associated with the

flow has exceeded a maximum allowed inactivity period, the flow having a context

identifier. Babbitt discloses a system and method of IP address management that can

reuse IP addresses that have been inactive for a finite amount of time (column 12, lines

27-55). It would have been obvious to one having ordinary skill in the ad at the time the

invention was made to modify Koodli's embodiment to have a means of determining a

time of inactivity for utilization of context identifiers, and reusing said context identifiers

for other streams. The motivation is a desire to have an efficient and robust system that

wisely allocates the use of resources by detecting unused identifiers. This will increase

the reliability of Koodli's system, which is a first and foremost objective to accomplish

header compression schemes.

Regarding claims 28, 30, 31, 33, 34, and 36, Koodli discloses the ability to detect

when initial packets containing full headers to start a context stream are lost (*establishing

that the flow comprises a compressed packet in the place of a full header packet, and

establishing that the full header packet is lost*, column 2 lines 60-65). Koodli also

discloses the method, means, and logic to establish a context identifier for a new stream.

The initial packet is sent to decompressor 36 with the full header. Decompressor 36 then

establishes a context state for that stream (*assigning the context identifier to the flow in

response to establishing that the context identifier is available*, column 6, lines 65-77;

column 7 lines 1-15). Koodli, however, fails to expressly disclose the step of determining that an inactive time associated with the flow has exceeded a maximum allowed inactivity period, the flow having a context identifier. Babbitt discloses a system and method of IP address management that can reuse IP addresses that have been inactive for a finite amount of time (column 12 lines 27-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Koodli's embodiment to have a means of determining a time of inactivity for utilization of context identifiers, and reusing said context identifiers for other streams. The motivation is a desire to have an efficient and robust system that wisely allocates the use of resources by detecting unused identifiers. This will increase the reliability of Koodli's system, which is a first and foremost objective to accomplish in header compression schemes.

Response to Arguments

4.   Applicant's arguments with respect to claims 1-9, 26, and 28-38 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

5.   Claims 29, 32, and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6.   Claim 38 is allowable.

The following is an examiner's statement for reasons for allowance.

Claim 38 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest <u>a method for performing compression by receiving at a compressor a flow comprising a plurality of packets, each packet having a packet identifier, the packet identifiers associated with a predetermined increment, ignoring a change in the predetermined increment associated with the packet identifiers, determining at the compressor that a previous inactive time of a previous flow has exceeded a previous maximum allowed inactivity period, the previous flow associated with a context identifier, the previous inactive time exceeding the previous maximum allowed inactivity period prior to exceeding an expiration period, establishing that the context identifier is available, assigning the context identifier to the flow in response to establishing that the context identifier is available, appending a full header packet corresponding to the context identifier to the flow, compressing the plurality of packets, transmitting the flow to a decompressor, receiving the flow at the decompressor, each packet of the flow having a sequence number, detecting a skip in the sequence numbers of the plurality of packets of the flow, accepting the flow having the skip in the sequence numbers, determining that an inactive time associated with the flow has exceeded a maximum allowed inactivity period, the flow having a context identifier, establishing that the flow comprises a compressed packet in the place of the full header packet, and establishing that the full header packet is lost.</u>

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hong Cho whose telephone number is 571-272-3087.

The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-3088.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

hc
Hong Cho
Patent Examiner
8/10/2005

**JOHN PEZZLO
PRIMARY EXAMINER**